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Entomological News

AND

PROCEEDINGS OF THE ENTOMOLOGICAL SECTION

OF THE

ACADEMY OF NATURAL SCIENCES

OF

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JANUARY, 1893.

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EXCHANGES

Not exceeding three lines free to subscribers.

☞ These notices are continued as long as our limited space will allow; the new ones are added at end of the column, and only when necessary those at the top (being longest in) are discontinued.

Coleoptera.—Price-lists wanted.—J. H. Bomberger, Box 76, Columbiana, O.

Lepidoptera.—Have a lot of fine *Cecropia* cocoons which I wish to exchange for cocoons or pupæ of almost any other variety of Lepidoptera.—James Tough, 236 S. Water St., Chicago, Ill.

Lepidoptera.—I desire to exchange cocoons of *Samia cynthia*, *Telea polyphemus* and *Attacus cecropia* for other N. Am. cocoons or bird's eggs.—T. W. Glover, Whitman, Mass.

Lepidoptera.—Cocoons of *Attacus columbia* Smith to exchange for native lepidoptera, or for books on North American lepidoptera.—Robert H. Wolcott, Phi Delta Theta House, Ann Arbor, Mich.

Lepidoptera.—I am studying the Noctuid genera *Euclidia*, *Drasteria* and *Litosea*. Specimens bought, exchanged or determined.—M. V. Slingerland, Cornell Insectary, Ithaca, N. Y.

Lepidoptera.—Wanted to purchase cocoons and larvæ from different parts of U. S. State name and price.—E. J. Kuegeman, 54 May St., Lake View, Chicago, Ill.

Lepidoptera.—Wanted to exchange, papers on N. Am. Lepidoptera for Noctuidæ or Heterocera generally. Noctuidæ named for privilege of retaining desiderata.—John B. Smith, New Brunswick, N. J.

Hymenoptera, especially Bees of U. S. and Canada, wanted. Tropical collections to name.—Wm. Hampton Patton, Hartford, Conn.

Coleoptera of N. Am. and Mexico wanted by purchase or exchange; large collection.—Fred. C. Bowditch, Tappan St., Brookline, Mass.

Lepidoptera.—To exchange *Cat. amatrix*, *C. parta* and *Hemaris thysbe* in papers, for southwestern species or Arctians and Zygænids set or papered.—Dr. R. E. Kunzé, 606 Third Ave., New York City.

Lepidoptera.—Wanted, *Plusia balluca*, *metalliica* and *ampha;* also the Hydrœcias. Have some of the rarer eastern Noctuids for exchange.—Henry Bird, Rye, N. Y.

Coleoptera and **Hemiptera**. European and exotic, also postage stamps of Roumania, offered for American Hemiptera-Heteroptera unnamed.—A. L. Montandon, Strada Viilor filarete, Bucarest, Roumania.

Lepidoptera wanted, especially Geometridæ from all parts of the world; European given in exchange.—Chr. Schröder, Rendsburg, Germany.

Phryganidæ wanted; will exchange choice Coleoptera and Lepidoptera from Kansas, Colorado and New Mexico (Prof. F. H. Snow's collecting) for Caddice-flies, U. S. or exotic.—Vernon L. Kellogg, Univ. of Kansas Lawrence, Kansas.

Coleoptera.—Coleoptera to exchange for Coleoptera, Hymenoptera, Odonata, aquatic Hemiptera and entomological literature. Cicindelidæ, Cerambycidæ, Meloidæ, especially desired.—W. E. Snyder, Beaver Dam, Wis.

Lepidoptera.—I offer European species in exchange for American, especially Sphingidæ and Catocalas.—A. Voelschow, Schwerin in Meckl., Ger.

Lepidoptera.—Good exchange or cash given for specimens of *Nadata doubledayi* Pack. Also wanted any of the rarer Notodontidæ and Limacodidæ.—Harrison G. Dyar, 599 Broadway, New York City.

Lepidoptera.—Wanted in exchange, especially Bombycidæ and Noctuidæ from all parts of the United States.—Harry W. Foote, Agricultural Experiment Station, New Haven, Conn.

Coleoptera.—For exchange: Scarabæidæ, Dytiscidæ, Gyrinidæ and Hydrophilidæ, especially desired.—Ralph Hopping, Redstone Park, Kaweah, Cal.

(Continued on third page of cover.)

ENTOMOLOGICAL NEWS

AND

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COLLECTING IN THE FAR NORTH.—Part II.

II. THE STIKINE RIVER.

By H. F. WICKHAM, Iowa City, Iowa.

Not having a tent I used an old quilt to make a shelter large enough to crawl under at night in the vain hope of being able to keep out the mosquitoes by fastening down the end after I had entered. In the morning I used to find numerous little beetles on the outside, evidently attracted by some peculiarity in the color or odor of my domicile, since they occurred rarely on other shelters in the camp; among these captures may be enumerated the following species: *Porrhodites fenestralis*, *Lothrimæum* sp., *Olophrum porcum*, *Pediacus fuscus*, *Henoticus serratus*, *Cænoscelis cryptophaga*, *Corticaria serricollis* and *Podabrus scabra*. The summit of the hill, which is divided by the cañon furnished a number of *Cryptohypnus nocturnus*, found beneath a log.

After a few days had been spent at the cañon, a party of Indians came up the river in canoes on their way to the Tahltau village above Glenora, and with them I engaged passage as far as the latter place. At one of our stops I managed to find a few

specimens of *Aegialia rufescens* under a piece of wood nearly buried in sand, but not much else of interest occurred, excepting *Opisthius Richardsonii*, a specimen of which I washed out of the bank.

Glenora was reached at last, and, through the kindness of the Inspector of Customs, I was soon installed in the building formerly used as the Custom House. This place was a thriving and busy little town during the days of the gold excitement, but is now almost deserted, except by a few miserable and diseased Indians who manage to exist on fish and berries, with what little additional food they can procure of the white traders near by. The country here proved very different from what I had seen on the lower river, rising in terraces from the stream, the sides and tops of the benches being covered with a growth of conifers and shrubbery, but not of so imprenetable a character as near the coast. The insects found proved quite different, as a comparison of lists will show.

Close to the river, under rubbish and drift-wood, were found several species of *Nebria* in small numbers. *N. metallica*, *hudsonica*, *Sahlbergi* and *Mannerheimii*, with *Opisthius Richardsonii*, *Bembidium planatum*, *planiusculum*, *striola* and *lucidum*, and *Platyrus piceolus*. In damp spots under dung occurred *Platytethus americanus*, *Tachinus semirufus* and some Aleocharini. Beneath the bark of a log lying near the water I got a series of *Omalium pusillum*, *Dryocœtes affaler* and *Polygraphus rufipennis*. Up on the terrace, where the soil was dry, the fauna was of a different character, and here I got *Bembidium monelum*, *Harpalus cautus* and *rufimanus;* under burnt logs a few *Cytilus trivittatus* were seen, beneath sound ones I took one example each of *Platycerus depressus* and *Adimonia externa*. In fungi, besides a lot of Staphylinidæ, I took a few *Hallomenus punctilatus* and *Tetratoma concolor*. Beating flowers yielded a few *Centorhynchus* and a few single specimens of *Leptura subargentata*, *Buprestis Langii* was seen once on the rafters of a cabin.

Sickness and the advance of the season impelled me to leave after a short stay here, and I took the opportunity offered by the return of the Indians to go back with them. Our return trip was made in short time and with little labor, having the current and often the wind in our favor, we reached the mouth of the river after only seventeen hours of actual travel.

LIST OF LEPIDOPTERA FROM JAMAICA, W. I.

By Wm. J. Fox, and C. W. Johnson.

The species included in this list were taken by us during a short visit to Jamaica in the months of April and part of May, 1891. At the time of our visit insects of all orders were very scarce, though the majority of the species mentioned herein, with a few exceptions, occurred rather commonly. The greater part of the collection was made at Kingston, Bog Walk and Port Antonio. In addition to those species captured by us, we saw at Port Antonio *Urania Sloanus*, *Aganisthos odius* Fab. and two specimens of the very rare *Papilio homerus*. About twenty-five additional species of moths are not included, as it was impossible for us to identify them at the present time. To Dr. Henry Skinner we are indebted for verifying the identifications.

RHOPALOCERA.

Nymphalidæ: *Danais Jamaicensis* Bates, *Heliconius charitonius* L., *Colænis delilia* Fab., *Dione vanillæ* L., *Euptoieta hegesia* Cram., *Junonia genoveva* Cram., *Anartia jathrophæ* L., *Victorinia steneles* L., *Adelpha abyla* Hew., *Calisto zangis* Fab., *Cystineura dorcas* Fab., *Dynamine zetes* Men., *Anæa troglodyta* Fab. Lycænidæ: *Thecla eurtyulus* Hüb., *T. pan* Dr., *Lycæna theonus* Luc., *L. filenus* Poey, two undet. spp. Papilionidæ: *Eurema citrina* Poey, *E. Westwoodi* Luc., *E. lisa* Bd. L., *E. gnathene* Bd., *E. bulæa* Bd., *E. thymetus* Poey, *E. elathea* Cram., *Pieris monuste* L., *Catopsilia rorata* Butl., *C. drya* Bd., *C. statira* Cram., *Papilio thersites* Fab., *P. pelaus* Fab., *P. polydamus* var. *polycrates* Hofm. Hesperidæ: *Thymele tityrus* Fab., *T. proteus* L., *Aethylia amphion* Hüb., *Carystus tripunctatus* H. S., *Pamphila phylæus* Dr., *P. pustula* Hüb., *P. coscinus* H. S., *P. sylvicola* H. S., *P. amyntas* Fab., *Hesperia syrichtus* Fab., *Nisonaides philemon*, *Achlyodes gesta* H. S., six unidentified species.

HETEROCERA.

Empyreuma pugione L., *Camposia credula*, *Lauron vinosa* Dr., *Pareuchætes cadaverosa* Grote, *Ecpantheria nigriplaga* Walk., *Utethesia venusta* Dalm., *Agrotis discernans* Walk., *Hadena insignis* Walk., Homoptera sp., *Margaronia hyalinata* L.

ELEMENTARY ENTOMOLOGY.

LEPIDOPTERA–HETEROCERA (Moths).

By Prof. JOHN B. SMITH, New Brunswick, N. J.

Following the Limacodidæ in our lists are the Psychidæ. There is really very little to associate this latter family with any that have gone before, nor that immediately follow, but I have no more satisfactory location to propose. The larvæ of this family are all bag worms; that is, they make a bag or case for their protection, which they carry with them everywhere, and in which the entire larval life is passed. The females, indeed, usually do not leave their case at all, but are wingless or larviform, and the eggs frequently develop or mature within the abdomen without being laid in the ordinary way. In due time the young caterpillars hatch and then eat their way through the egg-shell, the mother womb and out of the old bag. They start a case of their own almost immediately, and enlarge this as growth renders it necessary. The cases are characteristic, and differ in the species; some are made of silk alone, some are covered with leaf fragments. and some with little sticks. It is interesting that, in some exotic species, the bags differ in the sexes; not only in size, but also in make up. That of the male will often have a larger, stouter twig or stick projecting below it, and on this it rests when emerged from the pupa, and until it is fully mature. The female, which does not leave her house at all, requires no such structure, and therefore builds none. The male insects are always winged, the wings frequently quite large, often transparent, or thinly clothed with scales, the color usually black. The antennæ are pectinated, often even plumose. The tongue is short, or almost wanting, in the female rudimentary. The venation is as curious and aberrant as is the rest of the insect, and it varies considerably within family limits. The median cell is always divided on both wings; an accessory cell may be present either at the upper or lower angle of the cell; the veins sometimes branch before they reach the margin, and the internal veins are either branched, or, on the primaries, with a long fork at the base. In our lists *Perophora* and *Lacosoma* are referred to this family. Mr. Kirby thinks they do not belong here, and refers them to the Drepanulidæ, which may or may not be correct. They are probably not Psychidæ.

The Dioptidæ is an interesting family, of which we have in our fauna a single genus and species only, *Phryganidia californica*, and I am not so certain but that this really belongs with some of the exotic forms which I have seen. Based on our species the family has large, somewhat thinly-scaled wings, the primaries with one, secondaries with two internal veins. On both wings veins 3 and 4 are on a long stalk, separating toward the outer margin, and 5 is from the cross-vein, almost exactly at its middle. On the secondaries 6 and 7 are stalked, and on the primaries veins 7 to 10 are all from the same stalk. The antennæ of the male are lengthily pectinated, of the female simple, and the tongue is only moderately developed. I am strongly inclined to refer the species very near to the Lithosiidæ, if not to them directly. In its larval history it is very like *Euphanessa*, especially in having a naked pupa suspended by the tail, and in other features they are not dissimilar. The genus is a rather aberrant one, was referred to the Psychidæ by Packard, to the Zygænidæ by Stretch, and to the Dioptidæ by Butler. It must not be taken as giving the characters of the latter family, except in so far as *Phryganidia* is a member of it.

The Notodontidæ again contain a considerable number of genera and species, and a considerable diversity of form and habitus. As a rule the head is retracted, very small, the tongue only moderately developed, or more usually entirely wanting; the ocelli are wanting in the genera examined by me, and the male antennæ are lengthily pectinated, those of the female being unusually short in some genera. The thorax is proportionately short, while the abdomen is proportionately long in most instances. These proportions of head, thorax and abdomen serve to give the members of this family a distinctive appearance, which, once recognized, makes placing the insect easy, at a glance. The legs are usually clothed with long hair, and are subequal in length, the posterior very little longer, unlike those of the Noctuidæ, where they are often double the length of the others. The wings are of moderate or, proportionately, rather large size, primaries with one, secondaries with two internal veins; vein 5 of each wing from the cross-vein nearer to 6 than to 4. There is quite a diversity in the appearance of the larva, and some difference in habits of pupation. Some make an underground cell, others spin a more or less dense cocoon and pupate above ground.

The Platypterygidæ is a small family of easily recognized forms. The body is rather slight, the parts fairly proportioned. The mouth parts are moderately developed, the ocelli are wanting and the male antennæ are pectinated. The legs are subequal in length. The wings are large and broad, the primaries distinctly falcate, giving the species a characteristic appearance. Both fore and hind wings have one internal or free vein only, and 5 is nearer to 4 than to 6; an oblique, somewhat sinuous vein closing the cell. On the secondaries the subcostal branches, giving rise to 6 and 7, before the end of the cell. The proportion and form of the wings give the venation a somewhat butterfly-like appearance.

———o———

Coleoptera of the Mountainous Region of North Carolina.

By PHILIP LAURENT, Philadelphia, Pa.

I had often desired to take a trip to the mountains of North Carolina, and when my friend, Dr. Skinner, made the proposition for a two weeks' collecting trip to this region, I at once consented. We left the city of Philadelphia on July 5th on board the 7.40 P. M. train, arriving at our destination, Cranberry, N. C., after a ride of twenty-four hours. A good night's rest and a breakfast of hot corn-cakes, oat-meal and hot potatoes, washed down with a glass of fresh milk, and we were ready for a hard day's work. From recent articles that I had read I was led to believe that many rare and possibly new species would be found in this region, and possibly there may be among the foot-hills or during the months of June and August, but I doubt it very much owing to the nature of the country, which consists of nothing but forest-covered hills and mountains, very little land being under cultivation. My first day's collecting convinced me that little new material was to be found, as the majority of the species captured represented old, familiar faces that I had often seen while collecting in Pennsylvania and New Jersey. Much rain had fallen during the two weeks previous to our arrival, which may partly account for the scarcity of insect life. During our two weeks' stay I captured two hundred and twenty-eight species of Coleoptera, represented by about fourteen hundred specimens, among the lot being a few rare species. Among the rarer species taken and species not generally found in the Northern and Middle

States, I might mention the following as being of particular interest to the Coleopterist: *Cychrus canadensis* Chd., *Pterostichus grandiceps* Chd., *Mycetina perpulchra* Newm., *Endomychus biguttatus* Say, *Deltometopus amœnicornis* Say, *Microrrhagus triangularis?* Say, *Corymbites hamatus* Say, *Agrilus acutipennis* Mann., *Geotrupes Balyi* Jek., *Anomala marginata* Fab., *Centrodera decolorata* Harr., *Toxotus cylindricollis* Say, *Leptura biforis* Newm.

Our collecting was all done at an elevation of three thousand feet and upwards, the highest point reached being that of Grandfather Mount, the height of which is close to six thousand feet. I was in hopes of adding some new material to my collection of water beetles, but of them it might properly be said that they were conspicuous by their absence. *Gyrinus analis* Say, or a closely allied species, being the only water beetle observed, the icy coldness of the streams and ponds no doubt accounting for the absence of water beetles as well as other aquatic insects.

A NATURALIST'S FLEAS.—A naturalist, who is both an ardent student in his branch of science, and absent-minded to a degree which keeps his family on the alert, recently celebrated his silver wedding. Many guests were invited for the occasion, and the house was made ready for the reception of the company.

Just as the first guest arrived one of the daughters was sent to summon the father, who had not come from his study. Care had been taken that he should be reminded to dress in time, so he was all ready, and at the summons the daughter noticed that her father carried in his hand a small wooden box, and as he shook hands with the nearest guest she saw him drop it. The cover rolled off, but she gave a sigh of relief when she saw that the box was apparently empty.

The naturalist, however, uttered a cry of dismay, and instantly went down on his hands and knees in a vain attempt to gather up something.

"Have you spilled anything, father?" she asked.

"Spilled anything!" he echoed, in evident indignation over her calm tone. "I have lost fifty fleas that I have just received from Egypt!"

The effect of this intelligence on the family was nothing in comparison to the effect the catastrophe had upon the company before the evening was over, and the only thing that the naturalist said to his friends in answer to their congratulations upon his happy married life, so his daughter declared after all was over, was to ask that if they carried away any of his Egyptian fleas they would return the insects to him.—*Newspaper.*

ENTOMOLOGICAL NEWS.

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PHILADELPHIA, PA., JANUARY, 1893.

WITH this number the NEWS commences its fourth year, and now may be said to be a well-grown, vigorous child, having safely gotten through its infancy. The present number contains thirty-two pages, which is just double the number with which it commenced its existence. It is the only regularly illustrated entomological journal in the world, and gives more paging and interesting matter for the subscription price than any other journal treating of the same subject. It has been our endeavor to improve it in every way, and its rapid growth and the kindly support it has received prove that we have not failed. We will strive to continue in the same way, and we trust our subscribers and friends will aid us as far as may be possible. We have made some changes in the personnel of the editorial committee: Mr. Philip P. Calvert has been appointed associate editor, and Rev. H. C. McCook and Mr. Charles Liebeck made members of the Advisory Committee. We have decided to present all the more scientific or technical papers to the Entomological Section of the Academy and have them read before that body and published under the special heading in the NEWS entitled, Proceedings of the Entomological Section. We wish to emphatically state that all such papers will be published according to date of reception, and all other papers the same way, only making two separate classes. We are obliged to issue papers according to priority of reception from the standpoint of equity.

PICTURES for the album of the American Entomological Society have been received from Mr. I. C. Martindale, Prof. John B. Smith, Charles S. Welles, Dr. W. J. Holland, Prof. G. C. Davis, E. V. Beales, M. V. Slingerland, Howard Evarts Weed, Alda M. Sharp, T. B. Ashton and B. Neumoegen, Esq. We have room for many more.

DEPARTMENT OF ECONOMIC ENTOMOLOGY.

Edited by Prof. JOHN B. SMITH, Sc. D., New Brunswick, N. J.

Introduction of Predaceous Insects.—In "Science," No. 509, for Nov. 4, 1892, Mr. Camillo F. Schaufuss, gives an account of the efforts made by Mr. A. D. Hopkins, of the Virginia Station, to collect and introduce into our country the European *Clerus formicarius* L. to assist in destroying the Scolytids which are so injurious to Virginian forests. Mr. Schaufuss considers the experiment a promising one, and sees no reason why it should not prove successful. There seems no real reason, perhaps, why it should not be; but it would not be well to anticipate too much. There would seem to be no reason why our allied American species should not increase sufficiently to control the Scolytids, but they do not seem to do so. There is not even proof that *Clerus formicarius* in its own home is in itself a large factor in controlling Scolytids. The thorough forestry organization of Germany is alone sufficient to minimize injury; the removal of every diseased or infested tree; the systematic collection of fallen branches; the utilization of absolutely everything not needed by living trees, is exactly what intelligence would dictate, and, where the destructive insects themselves are placed at so great a disadvantage, predaceous insects may be relatively much more numerous and effective. The result of the experiment will be watched with interest.

It is perhaps a trifle unfortunate that Dr. Riley's experiment, the introduction of *Vedalia* to destroy *Icerya* was so splendidly and rapidly successful. The success has become so widely and generally known that it seems to have become a fixed idea with many that all sorts of injurious species can be controlled in the same way. I have been asked many times by all sorts and conditions of men why I don't try to do something of that kind for our common pests. Dr. Riley's experiment was made under unusual circumstances, and on a strictly scientific basis, with all the chances in his favor. He had to do with an introduced insect, which, in its own home, was not particularly abundant or destructive. He reasoned, correctly enough, that if it could be discovered *why* the insect was rare at home and abundant here, the conditions might be made more similar. The working out of the problem deserves all possible praise, and the success was signal. The natural enemy was discovered, its history was made out, and it was introduced, propagated and colonized. The insect was only asked to do here what it had already done at home, and was placed in surroundings where *Icerya* only was familiar to it as prey. The same combination of circumstances may not occur again for years in favor of an experiment of that kind.

This should not be read as an adverse criticism of Mr. Hopkins' experiment, but rather as a warning that too much must not be expected of natural enemies. Nature never works to the immediate destruction of its creatures; the balance is so nicely adjusted that no rapid and per-

manent changes are possible until man intervenes, and then he turns the balance, nine times out of ten in favor of the destructive insect. Few injurious insects are more commonly parasitized than the larva of *Pieris rapæ*, the "cabbage worm." Of the late brood it is difficult to find chrysalids that are sound, and if the search be made in Spring, not one per cent. will be found alive. From these few surving pupæ butterflies issue, and from the vast number of others the parasites—more parasites than the butterflies could lay eggs; and yet, each season, from the few Spring insects we get swarms of butterflies by Summer, and in mid-Summer hosts of larvæ. I have absolutely *no* faith in the efficiency of parasites to certainly control injurious insects under present artificial conditions. Parasites are natural *checks* only, and the check may be placed far beyond the point where, in our opinion, the insect becomes destructive.

The Elm Leaf Beetle.—In number 2 of vol. v, of "Insect Life," issued November, 1892, is an abstract of the minutes of the meeting of the Entomological Society of Washington for October, 1892, in which occurs the following sentence: "He [Prof. Riley] also read extracts from a communication from Prof. J. B. Smith, who had found the eggs of a second brood of *Galerucella xanthomelæna* at New Brunswick, N. J." As it stands there, the sentence is somewhat misleading, and effectually contradicts the papers on the subject, published by me earlier in the season, which was not intended. The essential part of my letter to Dr. Riley is dated August 31st, is as follows: "I have to-day—since writing you this morning—discovered here and there patches of eggs of *G. xanthomelæna*, and one brood of newly-hatched larvæ on the new foliage of the elms. The parent beetles are the results of the latest larvæ of the first brood and there are very few of them about. I will have to be away for the next few days, but I will have some of the beetles collected and prepared for study. It is due to myself to say that I found nothing of the kind in previous years, and due to you to say that facts have verified your suggestion that, with abundant fresh food, some of the beetles would, exceptionally, produce a second brood, as in Winter they exceptionally produce a third. It is a remarkable fact that, from early in July until late in August, no eggs should have been seen, while now, quite suddenly, there is no difficulty in finding them, though they are by no means abundant."

A few days later when I again had an opportunity of examining the trees, eggs had not increased, nor was there any increase later on. The larvæ that hatched from them fed slowly, many starved to death, and a very small proportion only reached the imago state. The oviposition for a second brood is decidedly exceptional among the beetles. It is curious that the beetles emerging in July should have made no attempt to oviposit, while of the same brood, some emerging after the middle of August should have reproduced their kind.

Corn-worm.—This pest, the larva of *Heliothis armiger*, has been more than usually abundant during the past season in New Jersey. Its work on corn is well known, and is well illustrated in the plate accompanying this

number. The ears were picked up at a husking in Cumberland County, and they were, unfortunately, by no means exceptional specimens. The outer rows had been injured to a very considerable extent, but damage decreased rapidly toward the centre of the field, indicating that the insects had come on from the outside. But it was not on corn that the greatest money injury was caused by the pest, but on tomatoes. Dr. Riley has given a very characteristic figure of the larva on tomato, and I had abundant opportunity of verifying its fondness for that fruit or vegetable. Early tomatoes are a very important feature in the money crop of the farmers of southern New Jersey, and they force their plants along as rapidly as possible to get the high prices ruling for early specimens. Late in June and early in July, they realize as much for a quart as they do a month later for a bushel. In 1892 more than sixty per cent. of the very earliest tomatoes were destroyed by this larva, and a money loss was caused totally disproportionate to the actual percentage of the crop injured. The same larva would sometimes enter two or even three tomatoes in succession, and even where little eating was done, the rain and dew entering, caused decay. Early in July the larvæ were maturing rapidly, and the next brood, finding an abundance of sweet corn, neglected the tomatoes, which were not thereafter disturbed, nor did I find the larvæ except on corn when this was available.

To deal with the insects on the tomato is not easy. Spraying with the kerosene emulsion has been attempted with some success, and pyrethrum has been used to some advantage. Yet the measure of success attained was not such as would authorize us to advise the use of either with confidence. In my opinion the insect should be dealt with in the corn-fields by means of thorough fall or winter plowing. It is too much the practice to leave the corn stocks in the ground over winter, and the insects, which pass the winter in the pupa stage some four to six inches underground, are left undisturbed until spring, when they are ready to emerge. Fall plowing would turn many of these pupæ to the surface and would break up the cells of others, so that the earth would come into direct contact with them and by its alternate freezing and thawing would destroy them.

The Pear-Tree Psylla.—This is the title of Bulletin 44 from the Entomological division of the Cornell University Agricultural Experiment Station, and it is written by Mr. M. V. Slingerland, Prof. Comstock's assistant. Mr. Slingerland draws a vivid picture of the injury caused by the insect, explains how it is done, give us a very complete life-history, and finds that the kerosene emulsion even when greatly diluted, twenty-five times, is effective in destroying the nymphs. Perhaps the most interesting part of the paper is the result or non-result of the use of a variety of insecticides on the eggs of this species. It was found that kerosene, kerosene emulsion, turpentine, turpentine emulsion, benzine, crude carbolic acid emulsion diluted ten times, resinwash of triple strength, whale-oil soap and sulphide of potash wash double strength, were all equally ineffective. The result was somewhat of a surprise, and yet may be explained by the

fact that, according to Mr. Slingerland, the egg is quite hard and may be roughly handled without injuring it. I have found the kerosene emulsion entirely ineffective on the hard eggs of *Melittia ceto* and *Anasa tristis*, but quite completely effective on the soft eggs of certain Tortricid moths and of certain Coccidæ. Chitine of any thickness resists perfectly the action of most penetrants, including alcohol and chloroform, yields but slowly to potash, carbolic acid or acetic acid, but is readily attacked by a saturated solution of bichloride of lime, or by *eau Javalle* and *eau Labarraque*. In such strength as we may apply them on vegetation, I believe that none of the materials named will injure a hard shelled egg, simply because they could not penetrate it. This will explain, also, why, on certain bugs like *Anasa tristis* or beetles like *Macrodactylus subspinosus*, the diluted kerosene is ineffective, and even the pure article is resisted quite strongly. On such insects the spiracles offer the only part of entry for the insecticide, and these are exceedingly well protected in the cases mentioned. The softer the egg or the insect, and the less protected the spiracles the more effective becomes the kerosene emulsion.

Notes and News.

ENTOMOLOGICAL GLEANINGS FROM ALL QUARTERS OF THE GLOBE.

[The Conductors of ENTOMOLOGICAL NEWS solicit, and will thankfully receive items of news, likely to interest its readers, from any source. The author's name will be given in each case for the information of cataloguers and bibliographers.]

To Contributors.—All contributions will be considered and passed upon at our earliest convenience, and as far as may be, will be published according to date of reception. ENTOMOLOGICAL NEWS has reached a circulation, both in numbers and circumference, as to make it necessary to put "copy" into the hands of the printer, for each number, three weeks before date of issue. This should be remembered in sending special or important matter for certain issue. Owing to low subscription rate, "extras" will be charged for, and when they are wanted, it should be so stated on the MS. along with the number desired. The receipt of all papers will be acknowledged.—ED.

IN recent years the bark-beetle, *Dendroctonus frontalis* Zimm. has appeared in the West Virginian forests with very disastrous results. To combat it in some measure, Mr. Andrew D. Hopkins, entomologist of the Agricultural Experiment Station at Morgantown, W. Va., has formed the plan of introducing against it a new enemy in the European bark-beetle, *Clerus formicarius* L. For this purpose Mr. Hopkins has lately been in Germany, and has here applied himself with great skill and good fortune to the collection of this useful insect, and to the study of its conditions of life. He has taken to America the larvæ of the bark-beetle destroyer in various stages, as well as the pupa and imago, all in their Winter rest, and the hope is entertained that if they arrive there in healthy condition, the attempt at acclimation can begin next Spring.—CAMILLO F. SCHAUFUSS, Mus. Dir. Meissen, Saxony.

RECENT SYSTEMATIC WORK ON THE NORTH AMERICAN TACHINIDÆ.—On page 350 of volume iv of "Insect Life," there appears a short note on the writer's systematic work on the Tachinidæ. With the sole desire to explain my position so that my work may not be misunderstood, I hope this note will not be out of place. I have long been familiar with the excellent advice of Baron Osten Sacken, quoted from the preface to his "Catalogue of North American Diptera," and no one recognizes more than the writer the value of monographic work. Perhaps there is more excuse for fragmentary preliminary work in this than in other groups of insects. However, it is, and has been from the first, my intention to produce a monograph of North American Tachinidæ, so soon as the undescribed material can be worked up and most of the synonymy disposed of. I hope that my communications will be of some value in the recognition of species, and that they will add to the systematic knowledge of the group. While I have great respect for Dr. Brauer's ability and previous valuable work, I claim that American students have a right to ask for full and recognizable descriptions of newly-erected genera, instead of simple reference to the type species which no one can examine without visiting the European museums. It is on this account hard to recognize Dr. Brauer's work in this country; and I believe one may be pardoned for publishing conscientiously thorough descriptions in this group, even at the risk of a few synonyms, because synchronous with Dr. Brauer's work. It is also a question whether Dr. Brauer's disposition of the Muscidæ will ever be accepted in full by systematists. So far as my own work is concerned, I may say that my motives have been quite correctly interpreted in the note above referred to. I have a very small allowance of time to devote to this work, and, so far, consider my communications as merely preliminary; nor do I deny that I desire thereby to secure priority. It is my full intention, so soon as my time and the circumstances in the case will permit, to bring these descriptions together in a monograph which shall be the more valuable for its completeness, and will not require such extensive subsequent additions and revisions as would a more premature one. I greatly regret the necessity for this note, which I feel called upon to offer in defense of my position.—C. H. TYLER TOWNSEND.

IT is perhaps worthy of note that the horn-fly has reached central Michigan, and was very thick and annoying in the southern part of the State the past Summer. The grain beetle, *Silvanus surinamensis*, is attracting much attention among farmers by eating the wheat in the bin. Keeping wheat for higher prices, year after year, and the warm Winters may explain this new annoyance. The past season the old parsnip caterpillar, *Papilio asterias*, has attacked celery quite generally in Michigan, doing considerable harm. Of course it is easily destroyed.—H. J. COOK.

HAVING read two paragraphs in the NEWS relating to Venturesome Butterflies, it occurred to me that the following might be of interest: On the roof of our house there is a space sixteen feet square enclosed by a

railing, within which we spent the latter part of the afternoon of many a hot day last August. Here, at about five o'clock every afternoon from two to five individuals of *P. huntera* appeared, flying with apparent unconcern close about the heads of the spectators, and frequently alighting on the chimney beside them, on the roof at their feet, and on the railing. They appeared each day with the utmost regularity, and often remained for some time after sunset.

On reading in the NEWS of the occurrence of *Feniseca tarquinius* at Jackson, N. H., I was reminded that I found two specimens of this butterfly in the road at Gaerwera Falls, Wilton, N. H., last June. I captured one, but it was so old and worn that I did not keep it. There were several other small butterflies in the vicinity, which I do not doubt were of this species, though I could not identify them.

Four species of butterflies which are not generally plentiful in New England are found somewhat commonly here. *Papilio philenor*, *P. cresphontes*, *Callidryas eubule* and *Junonia cœnia*. I have taken specimens of all, except *eubule*, which has been seen several times by my brothers and myself.—WILLIAM L. W. FIELD.

MORE VENTURESOME INSECTS.—The notes in the NEWS for November and December by Messrs. Webster and Calvert on the singular behavior of *Pyrameis atalanta*, reminds me that I have seen *Grapta comma* act in the same way in an orchard in Manchester, N. H. Almost any afternoon for several weeks this butterfly could be found flitting about above the decayed apples, or sunning himself on the trunk of one of the trees. At first I thought that he was attracted by the apples, but after these were removed he came as regularly as ever. Very often he would alight on my sleeve as I stood watching him. On Star Island, Isles of Shoals, in the Summer of 1891, I was extremely interested by the actions of a *Pyrameis huntera*, which came every afternoon at about 3.30 o'clock and perched upon the railing of the hotel piazza. Sometimes it even flew nearer and alighted on my chair, and once even on the book from which I was reading.—EDWARD W. CROSS.

NOTES ON THE FOOD-PLANT OF PAONIAS ASTYLUS Dru.—It may be of interest to some of the readers of the ENTOMOLOGICAL NEWS to learn that I found Dangleberry or Blue Tangle (*Gaylussacia frindosa*) to be the favorite food-plant of that rare Sphinx, *Paonias astylus* Dru., and that owing to this discovery, after many a vain search on huckleberry, I was fortunate enough to collect quite a number of larvæ during the months of August and September. Dangleberry grows abundantly in some parts of New Jersey, and is principally found in shady places on the outskirts of woods, the bushes often reaching a hight of over three feet; it can readily be recognized by the green berries dangling from a long stem and turning reddish blue late in the season. Huckleberry bushes of the various species on which some of the Newark collectors always find the beautifully speckled *astylus* larvæ, were very plentiful where I did my

collecting, but I invariably found them on dangleberry only, and during this season (1892) I have taken them in the following places in New Jersey, viz., Soho, Franklin, Eagle Rock and Greenwood Lake.—HERMANN AICH, 43 Murray Street, N. Y. City.

RESIDING upon the edge of a vast wilderness the temptation to explore its depths cannot always be resisted, in consequence my brother and myself with three Indian guides and packers might have been found, late in June, threading our way in birch-bark canoes through the intricate channels which form the canoe paths between the Lake of the Woods, Rainy Lake and Vermilion River district, on our way back to Duluth, Minn.

At Black Bay, on Rainy Lake, June 19th, we first met *Papilio turnus* in quantities, seemingly attracted to the vicinity of an Indian encampment by the odor of refuse of moose recently killed, whose bones, with pieces of meat attached, lay scattered about.

Quite a number of *turnus* were taken upon the wing when an accidental discovery made the capture comparatively easy. Having caught a ragged specimen, which proved worthless for cabinet purposes, it was thrown upon the ground, when I observed that nearly every *P. turnus* as it passed circled back and hovered over the dead one which looked brilliant in the sunlight. At first I thought the brilliant spot was being mistaken for a flower, which, to a certain extent, was no doubt the case, but by placing captured specimens, just enough "pinched" to prevent flying, of both male and female, at intervals, one could readily see that color alone was not the final attraction. The male decoy resting upon the ground with wings slightly rising and falling would attract the first *P. turnus* that came within a dozen feet; a few zigzag turns and the visitor would hover over an instant, almost touching, and then depart. In the case of the female decoy, however, it was different; the same approach was made, but instead of departing, the butterfly seemed to be under the influence of a charm and would hover about, finally settling upon the ground beside the decoy. In this manner I attracted sometimes as many as a dozen about the decoy in a space not over six inches square. In crossing the ten rough portages of Vermilion River I succeeded in taking over 200 bright specimens by making decoys of the first few females caught, besides, perhaps, a hundred or more which were allowed to escape on being found imperfect. This experience proved of interest to me, and it may call out further facts regarding the use of "decoys" by other readers.—FRANK S. DAGGETT, Duluth, Minn.

LAST Spring a friend of mine living at Concord, N. H., thought he would collect a few insects at the electric lights in that city and send them to me as a surprise. He is no entomologist, and cannot tell a butterfly from a moth, so of course did not know a rare thing from the most common. In due time I received a box from him containing about one hundred specimens of all kinds—bugs, beetles, flies, grasshoppers, moths, and in fact everything that comes to an electric light. As I only care for

the Lepidoptera, I do not know how many other rare things there were, but among the moths I found three nearly perfect specimens of *Phragmatobia assimilans* var. *franconia* Slosson, two males and one female. You may be sure that I was quite content to have the rest of the specimens not quite so rare, although there were several other good things in the box. I do not know when he collected them, but from the other species sent it must have been early in the season. I thought it a little strange that he should take three of *franconia* and none of the more common *rubicosa*.—CHAS. F. GOODHUE.

TRANSACTIONS American Entomological Society, vol. xix (1892), pp. 257–304 inclusive, have been printed since our November issue, and contain the following papers: A preliminary synopsis of the Harvest-Spiders (Phalangidæ) of New Hampshire, by C. M. Weed, five plates. Notes on North American Tachinidæ, with descriptions of new species, Paper VII, and the North American genera of Calyptrate Muscidæ, Papers III, IV and V, by C. H. Tyler Townsend. A synoptical arrangement of the genera of North American Jassidæ, by E. P. Van Duzee.

Identification of Insects (Imagos) for Subscribers.

Specimens will be named under the following conditions: 1st, The number of specimens to be unlimited for each sending; 2d, The sender to pay all expenses of transportation and the insects to become the property of the American Entomological Society; 3d, Each specimen must have a number attached so that the identification may be announced accordingly. Exotic species named only by special arrangement with the Editor, who should be consulted before specimens are sent. Send a 2 cent stamp with all insects for return of names. Before sending insects for identification, read page 41, Vol. III. Address all packages to ENTOMOLOGICAL NEWS, Academy Natural Sciences, Logan Square, Philadelphia, Pa.

Entomological Literature.

NOTE.—Until within the past few months, it has been usual to include in this Department of Entomological Literature, notices of the contents of *all* entomological publications received here. This course has resulted in occupying a larger number of pages than seems for the good of the NEWS. It is now intended not to publish notices of papers treating exclusively of entomological subjects which have very little or no bearing upon American insects. Exceptions, of course, will be made in favor of monographs. Anatomical, physiological and embryological papers will be noticed as heretofore. This note will explain the omission of, or very slight reference to the contents of various foreign journals. Special attention will be given to American journals and papers, but the completeness of this record will depend on the extent to which authors, editors and publishers transmit their publications to this Academy, or to the American Entomological Society.—P. P. C.

THE ANNALS AND MAGAZINE OF NATURAL HISTORY (6), No. 59, London, November, 1892.—New and obscure British spiders,* Rev. F. O. Pickard-Cambridge.

ZOOLOGISCHE JAHRBUCHER, v, 3, 4, Jena, Oct. 20, 1892.—An endeavor to show that the tracheæ of the Arthropoda arose from setiparous sacs, H. M. Bernard, 3 figs.; vi, 4, Oct. 29, 1892. On the ancestral history of the Papilionidæ, A. Spuler, 2 pls.

SCIENCE, New York, Nov. 18, 1892.—Flight of *Archippus*, E. T. Dumble. Codling-moth statistics, F. L. Wasburn. Dec. 2, 1892.—On the use of the compound eye of insects, R. T. Lewis.

JOURNAL OF THE ASIATIC SOCIETY OF BENGAL, lxi, pt. ii, 2, Calcutta, 1892.—Catalogue of the Diptera of the Oriental region; parts ii and iii, J. M. F. Bigot.

BOLLETINO DEI MUSEI DI ZOOLOGIA ED ANATOMIA COMPARATA D. R. UNIVERSITA DI TORINO, vii, 152, Oct. 20, 1892.—Diagnoses of new species of Diptera: Syrphidæ and Conopidæ from Mexico, Dr. E. Giglio-Tos.

ANALES DE LA SOCIEDAD CIENTIFICA ARGENTINA, xxxiii, 5, Buenos Aires, May, 1892.—Funeral discourse on Dr. Herman Burmeister. Dr. J. Balestra, Minister of Public Instruction. New Hemiptera of the Argentine and Uruguayan faunas,* Dr. C. Berg. Argentine dipterology (Syrphidæ) (cont.), F. L. Arribalzaga.

THE JOURNAL OF THE ROYAL HORTICULTURAL SOCIETY, xiv, London, October, 1892.—Report on the Conifer Conference held at the Chiswick Gardens, Oct. 7 and 8, 1891: Insects injurious to Coniferæ, W. F. H. Blandford.

MEMOIRS AND PROCEEDINGS OF THE MANCHESTER LITERARY AND PHILOSOPHICAL SOCIETY (4), v, 2, 1891-92.—On iridescent colors and a method of examining iridescent objects, birds, insects, minerals, etc., so as to ensure uniformity in their description, A. Hodgkinson.

ANNALES DE LA SOCIETE ENTOMOLOGIQUE DE BELGIQUE, xxxvi, 10, Brussels, 1892.—The collections of Articulates in the Musée Royal d'Histoire Naturelle de Belgique; G. Severin; the aquatic Coleoptera.

ENTOMOLOGISCHE NACHRICHTEN, xviii, 20, 21, Berlin, Oct.-Nov., 1892. —The Anthomyidæ of the Fallen-Zetterstedt collection [at Lund], P. Stein.

CATALOGUE OF EASTERN AND AUSTRALIAN LEPIDOPTERA Heterocera in the collection of the Oxford University Museum by Col. C. Swinhoe. Part I. Sphinges and Bombyces; with 8 plates. Oxford, Clarendon Press, 1892, pp. viii, 324; 1425 species are listed, including new ones.

* Contains new species other than North American.

CORNELL UNIVERSITY AGRICULTURAL EXPERIMENT STATION, Bulletin 44, Ithaca, N. Y., October, 1892.—The pear-tree *Psylla*, M. V. Slingerland, figs.

ZOE, San Francisco, Cal., October, 1892.—On a leaf-miner of *Populus Fremonti*, C. H. T. Townsend. Notes on two Mexican species of *Ceroplastes*, with a record of parasites reared from one, id. Notes on the butterflies of Yosemite Valley, E. C. Van Dyke. Notes on some Californian Cistelidæ, F. E. Blaisdell. Insects of Catalina Island, F. A. Seavey.

NATURE, London, Nov. 17, 1892.—On the walking of Arthropoda, H. M. Dixon, figs.

THE PHYSIOLOGY OF THE INVERTEBRATA by A. B. Griffiths, Ph.D., etc. New York, D. Appleton & Co., 1892, pp. xvi, 477, 81 figs.

THE ENTOMOLOGIST'S RECORD, London, Nov. 15, 1892.—The genus *Acronycta* and its allies (cont.), Dr. T. A. Chapman. Male [*Leucoma salicis*] copulating more than once, F. B. Newnham. The ova state of Geometræ, F. J. Buckell.

INSECT LIFE, v, 2, Washington, November, 1892.—Twenty-five papers, etc., read at the fourth annual meeting of the Association of Economic Entomologists at Rochester, N. Y., Aug. 15 and 16, 1892, some of which are: *Hypoderas columbæ*, D. S. Kellicott. Notes on Aegeridæ of central Ohio, ii, id. The possible and actual influence of irrigation on insect injury in New Mexico, C. H. T. Townsend. A new enemy to Timothy grass [*Oncognathus binotatus* F.], L. O. Howard. Notes on plant faunæ, T. D. A. Cockerell. The usual large amount of interesting notes.

PROCEEDINGS OF THE ZOOLOGICAL SOCIETY OF LONDON, 1892, iii, Oct. 1, 1892.—Descriptions of new species of Lepidoptera Heterocera from Brazil, Mexico and Peru, ii,*† W. Schaus. A list of the Lycænidæ of the South Pacific islands east of the Solomon group, with descriptions of several new species,* H. H. Druce, 1 pl.

ACTES DE LA SOCIETE SCIENTIFIQUE DU CHILI, ii, 1, Santiago, July, 1892.—*Latrodectus formidabilis* of Chili, F. P. Borne.

BULLETIN OF THE BOTANICAL DEPARTMENT, Jamaica, No. 36. Kingston, October, 1892.—Coccidæ, or scale insects, T. D. A. Cockerell.

THE AMERICAN NATURALIST, Philadelphia, December. 1892.—The striped harvest-spider: A study in variation, C. M. Weed, 3 pls. The functions of the nervous system of the Myriapoda, C. M. Child.

ZEITSCHRIFT FUR NATURWISSENSCHAFTEN, lxv, 3, Leipsic, 1892.—Two Hymenopterous hermaphrodites, Dr. R. Krieger. On the presence of fossil "Rückenschwimmer" (*Notonectes*) in the Braunkohl of Rott, Dr. D. v. Schlechtendal.

* Contains new species other than North American. † Contains new genera.

PAPERS AND PROCEEDINGS OF THE ROYAL SOCIETY OF TASMANIA for 1890, Hobart, 1891.—On new species of Tasmanian Araneidæ, A. T. Urquhart.

THE ZOOLOGICAL RECORD, volume the twenty-eighth, being records of zoological literature relating chiefly to the year 1891, ... edited by D. Sharp. London: Guerney & Jackson, MDCCCXCII. Arachnida, Myriopoda and Prototracheata, R. I. Pocock. Insecta, D. Sharp.

DIE SPINNEN AMERIKAS—Epeiridæ—von Graf. E. Keyserling nach dessen Tode herausgegeben von Dr. George Marx, iv, Bd. 1. Nürnberg, 1892. Verlag von Bauer and Raspe (Emil Kuester), pp. viii, 208, 9 pls.

REISEN IN DER ARCHIPEL DER PHILIPPINEN von Dr. C. Semper, Zweiter Theil. Wissenschaftliche Resultate, v, 7.—The butterflies of the Philippine Islands, G. Semper, pp. 271–380, taf. xlvii–xlix, Wiesbaden, C. W. Kreidel's Verlag, 1892.

ZOOLOGISCHER ANZEIGER, Leipsic, Nov. 28, 1892.—Biological note [on a dipter with Pseudoscorpions attached], Dr. F. von Wagner. Rules of nomenclature adopted by the zoological congress at Moscow, R. Blanchard.

THE OTTAWA NATURALIST, Dec., 1892.—Clothes moths, J. Fletcher, figs.

A MONOGRAPH OF ORIENTAL CICADIDÆ by W. L. Distant. Published by order of the Trustees of the Indian Museum, Calcutta. Pt. vii, pp. 145–158, pl. xv. Title page, Index, Preface. London, Calcutta, Berlin, August, 1892.

LEPIDOPTERA INDICA by F. Moore. Pt. xi, pp. 241–272, pls. 79–86. London, L. Reeve & Co., 1892.

PROCEEDINGS OF THE LINNEAN SOCIETY OF NEW SOUTH WALES (2), vii, 1, Sidney, Sept. 1, 1892.—Notes on the subfamily Broscini (Carabidæ),*† T. G. Sloane. Notes on Australian Coleoptera (Carabidæ),*† Rev. T. Blackburn. Notes on Australian Cynipidæ,* W. W. Froggatt.

LES ACARIENS PARASITES par P. Megnin, Paris, Gauthier–Villars et fils, G. Masson, pp. 183, 40 figs., small 8vo.—This undated volume forms one of the series "Encyclopedie Scientifique des Aide-Memoire" published under the direction of M. Leaute, member of the Institute.

THE ENTOMOLOGIST'S MONTHLY MAGAZINE, London, December, 1892. —Practical hints on sugaring, W. Holland, G. B. Longstaff. Coccids in Ants' nests, W. W. Smith.

THE BUTTERFLIES OF NORTH AMERICA, with colored drawings and descriptions, by W. H. Edwards. Third series, part xiii, Boston and New York, Houghton, Mifflin & Co., 1892. Treats of *Chionobas chryxus, calais, jutta, crambis, Brucei.*

* Contains new species other than North American.

THE ORTHOPTERAN GENUS HIPPISCUS, by Samuel H. Scudder. From Psyche, June, 1892, pp. 265-274; July, 1892, pp. 285-288; August, 1892, pp. 301-304; September, 1892, pp. 317-320; October, 1892, pp. 333-336; November, 1892, pp. 347-350; December, 1892, pp. 359-363.

COLEOPTEROLOGICAL NOTICES, iv, by Thos. L. Casey. From Annals of the New York Academy of Sciences, vi, pp. 360-712.

COMMON INJURIOUS INSECTS OF KANSAS, by Vernon L. Kellogg, University of Kansas, Lawrence, Kan., 1892, pp. viii, 126, 61 figs.

NEW SPECIES OF NORTH AMERICAN INSECTS DESCRIBED IN THE PRECEDING LITERATURE.

LEPIDOPTERA.

Aegeria rubristigma D. S. Kellicott; Insect Life, v, p. 84, Ohio.

ARACHNIDA.

Epeiridæ: n. gen. and species, Keyserling and Marx, Die Spinnen Amerikas, iv, pp. 1-208.

ORTHOPTERA.

Hippiscus, 20 n. sp.; *Sticthippus* n. subg., Scudder, Psyche, l. c.

COLEOPTERA.

Rhynchophora: numerous new sp. and gen., Casey, Ann. N. Y. Acad. Sci. vi, pp. 360-712.

A STREAM near Tucson, Ariz., petrifies all soft substances thrown into it. It is in the great Colorado potato beetle belt, and at the time of their migrations thousands of them strike the water and are converted into stone.—*American Farmer.*

Mr. H. DEVAUX has been making interesting experiments on the sense of taste in ants. Among other results he has found that *Lasius flavus*, while fond of sugar, dislikes saccharine. The ants swarmed around sugar laid out for them, but turned away from saccharine as soon as they tasted it. Even sugar became unpleasant to them when it was mixed with saccharine. It seems, therefore, that sweetness is not the only quality which attracts them to sugar.—*Nature.*

The Entomological Section

ACADEMY OF NATURAL SCIENCES, PHILADELPHIA.

PROCEEDINGS OF MEETINGS.

OCTOBER 27, 1892.

Meeting called at 8.20 P.M., Dr. Horn, Director, presiding. Members present: Horn, Laurent, Welles, Skinner, Ridings, E. T. Cresson, G. B. Cresson, Martindale, Johnson. Associates: Haimbach, Westcott, Fox, Nell, Calvert. The Director announced the death of Captain William S. Pine on Oct. 4, 1892, in the eighty-third year of his age. Captain Pine was one of the oldest members of the American Entomological Society. The Publication Committee reported in favor of the publication of the following papers: A Synopsis of the Subfamilies and Genera of North American Membracidæ, by F. W. Goding, M.D., and A Preliminary Synopsis of the Harvest-Spiders (Phalangidæ) of New Hampshire, by Clarence M. Weed. Mr. P. Calvert presented to the cabinet of the Society forty-three specimens of American and European Odonata not before represented in the collection. Mr. Laurent exhibited the Coleoptera he had collected in Mitchell County, North Carolina, during two weeks in July of the past Summer. The speaker said that owing to the elevation, over 3000 feet, the species were nearly all Northern. The collection made numbered about 1400 specimens and 225 species. *Cychrus canadensis* was one of the interesting species taken. Dr. Horn, in commenting on the collection, said such collections have great value in the study of geographical distribution. He also remarked that there is a form of *Leptura vittata* with yellow elytra which might deceive those not knowing of such a variety. Dr. Skinner exhibited the Lepidoptera collected by Mr. Laurent and himself in Mitchell County, N. C. Dr. Horn stated that he wrote to a friend in England that *Luperus* is not represented here in America, and his English friend took exception to the statement, and sent him specimens representing *Luperus* and *Luperoides* to convince him to the contrary, but they only confirmed his previous statement. Mr. Charles Boerner was duly elected an associate of the Section.

NOVEMBER 17, 1892.

Dr. Horn, Director, presiding. Members present: Horn, Ridings, Laurent, Skinner and Liebeck. Associates: Calvert, Fox, Boerner, Dr. Castle and Mr. Wenzel. The Publication Committee reported in favor of publishing the following: The North American Genera of Calyptrate Muscidæ, by C. H. Tyler Townsend. North American Tachinidæ, with descriptions of new species, by C. H. Tyler Townsend. The North American Pemphredonidæ, by Wm. J. Fox. Dr. Horn stated that he was still studying the Galerucini. Two species had given trouble to separate that differed principally in color markings, yet are very distinct. They are *notata* and *notulata*. The differences were pointed out by the

aid of drawings on the blackboard. Mr. Liebeck reported the capture of *Onthophagus nuchicornis* by Mr. Sheriff at Boston. Mr. Wenzel said he had found *Phytonomus punctatus* in abundance in West Philadelphia three years ago. He also mentioned having found *O. nuchicornis* in carrion. Mr. Wenzel presented four photographs to the Society, among them was of his grandfather, Henry Feldman, a well-known Philadelphia entomologist of the older generation. The flourishing Feldman Collecting Club was named after him. Mr. P. P. Calvert was unanimously elected a member of the Section.

DECEMBER 12, 1892.

The annual and business meeting was held this evening, Mr. Ridings presiding, owing to the absence of Dr. Horn, Director, on account of illness. Members present: Liebeck, G. B. Cresson, E. T. Cresson, Johnson, Welles, Calvert, Ridings, Skinner and Martindale. Associates: Fox, Westcott. Mr. G. C. Davis, of Agricultural College of Michigan, visitor. The following were presented to the cabinet: specimens of *Cryptocephalus badius* by Mr. H. W. Wenzel, and one male *Gomphus intricatus* by Mr. C. H. Tyler Townsend. At the election the following were elected officers for the ensuing year:

Director, GEO. H. HORN.
Vice-Director, I. C. MARTINDALE.
Recorder, HENRY SKINNER.
Conservator, HENRY SKINNER.
Publication Committee, J. H. RIDINGS, P. LAURENT.

The following papers were read and accepted by the Committee for publication in ENTOMOLOGICAL NEWS:

SOME NEW AND LITTLE-KNOWN AFRICAN BUTTERFLIES.

By W. J. HOLLAND, Ph.D., Pittsburgh.

LYCÆNIDÆ.

TINGRA Boisd.

1. **T. glagœssa** sp. nov. ♂.—Allied to *T. abraxas* Westw. and *T. maculata* Smith and Kirby, from which it may readily be distinguished by the fact that it has no black marks whatever upon the outer margin of the wings. It is uniformly pure white, except at the base of the primaries upon the upperside, which are slightly tinged with yellow. The only black marking is a small round spot at the end of the cell upon the primaries and secondaries. Expanse 35 mm.

Hab.—Talaguga, Upper Valley of the Ogove.

2. **T. limbata** sp. nov. ♀.—Allied to *T. maculata* Kirby, but readily distinguished from that species by the very heavy black border on the primaries and the outer margin of the secondaries, which is not interrupted as in *T. maculata* by large white spots at the extremities of the intraneural folds. Upperside: The anterior wings are irrorated with blackish scales upon the costa, and have three small black spots above the cell near the costa about the middle and a black spot at the end of the cell. The outer third of the wing is broadly black, the inner margin of this black band being excavated above the third median and produced inwardly upon the second and third median nervules. The band terminates at the outer margin is very slightly edged with white. The secondaries have a black spot at the end of the cell and one above it near the costa, and a submarginal series of smaller spots upon the interspaces parallel to the outer margin. The outer margin from outer to inner angle is broadly margined with black slightly interrupted with white on the interspaces at the ends of the folds. Underside: The underside is white, with the bases suffused with light orange. There is a small black spot in the middle and a large black spot at the end of the cell of the primaries, and the three black spots, which appear upon the upperside above the cell near the costa, reappear upon the underside. Beyond the cell on the primaries, there is a series of six black spots diminishing in size from the costa and terminating upon the space between the first and second median nervules. From the costa there extends a submarginal series of black spots, seven or eight in number, largest near the apex. The extremities of the nervules are marked by triangular black spots. The secondaries have a black spot at the end of the cell and curved limbal series of eight black spots sweeping around from before the middle of the costa to above the anal angle. This is followed by a series of six larger black spots extending from the outer angle to the anal angle. The ends of the nervules, as on the primaries, are tipped with triangular black marks. Expanse 43 mm.

Hab.—Kangwé, Ogové Valley.

This is a well-marked species, and is easily distinguished from all others allied to it.

3. **T. amenaidoides** sp. nov.—Allied to *T. amenaida* Hew. Upperside: The upperside is red; the costa clouded with blackish scales; three black spots above the cell parallel to the costa, a small black spot in the middle and a large black spot at the end of the cell, and a very small spot below the cell between the first and second median nervules. The apex is broadly black from the outer third of the costa to the second median nervule. The outer margin is narrowly edged with black below this. The secondaries have a large black spot at the end of the cell and a small black spot beyond it near the outer margin, which is narrowly fringed with black. Underside: The underside is red, with the costal margin, the apex of the primaries, and the entire surface of the secondaries irrorated with grayish scales. The marks about the cell of the primaries reappear

upon the underside, and in addition there is an irregularly curved series of five small black spots extending from the costa to the second median interspace, and a very faint subapical series of four small spots on this wing. The secondaries have a small black spot at the base, one at the middle, and another at the end of the cell; one below the cell on the first median interspace and one above the cell before the middle of the costa; in addition a submarginal series of eight spots parallel to the outer margin. There is a very faint marginal black line on both the primaries and secondaries, and the fringe, which is grayish, is checked at the end of the nervules with black.

♀.—The female is marked very much as the male, but has a submarginal series of spots upon the upper and lower sides of both wings. In one example before me the black apical band of the primaries is reduced to a mere fringe. Expanse: ♂, 35 mm.; ♀, 38 mm.

Hab.—Gaboon and Kangwé.

I was inclined to refer this form to *amenaida* Hew., but it differs constantly in having the border, which is very wide in *amenaida*, restricted to a mere line upon the secondaries and the outer angle of the primaries, and not having as many markings upon the primaries. It may be a local race of Hewitson's species.

D'URBANIA Trim.

4. **D. mapongua** sp. nov. ♂.—Allied to *D.* (*pseuderesia*) *variegata* S. and K. Upperside: The upperside is red, with costa, apex and outer margin of both wings broadly black. In addition, upon the primaries there are three or four broad and obscure spots near the base fusing with each other. The secondaries have a small black spot below the cell near the inner margin. Underside: The underside is prevalently gray. There is a large black spot at the end of the cell upon the primaries and a subapical series of four quadrate crimson spots margined internally by black, and between this black margin and the black spot at the end of the cell, a broad transverse limbal band of orange-red, running from the subcostal region to the outer angle, where it fades into white. The secondaries have two minute black spots near the base followed by a band of crimson marks crossing the cell, below which, and at the end of which, there are two large black marks. These are followed by a curved submarginal series of six crimson spots heavily margined inwardly and lightly margined externally by black. The primaries and secondaries have a narrow marginal black line, and the fringes, which are gray, are checked with black at the ends of the nervules. Expanse 30 mm.

Hab.—Kangwé.

I compared this species with the specimens in the collection of Mr. H. G. Smith, and showed it also to Mr. Kirby, and they agree with me in pronouncing it distinct from any species known to them.

LARINOPODA Butl.

5. **L. melandeta** sp. nov. ♂.—Allied to *L. libyssa* and *L. campimus*. Upperside: The upperside is white. The costa, the apex of the primaries are broadly black. Underside: The underside is as the upperside, but the black border of the primaries is interrupted by a subapical white line. The black border is also on this wing much narrower at the outer angle, which it does not quite reach. The secondaries have the black margin of the outer border extended around the inner border, and the outer border is divided near the anal angle by a narrow white line, and separated from the black fringe by a white line, which is broader near the outer angle and opposite the cell. Upon the cell there is a transverse oval black spot, which fuses with another large, irregularly shaped black spot, which is situated upon the middle of the costa. Expanse 30 mm.

Hab.—Talaguga, Upper Valley of the Ogové.

APHNÆUS Hüb.

6. **A. propinquus** sp. nov. ♂.—Allied to *A. orcas* Dru., from which it may be distinguished by the smaller amount of blue upon the upper surface of the wings, and the different form of the silvery bands upon the lower side of the wings. Upperside: The upperside is black with metallic-blue spots and bands disposed as follows: On the primaries a short longitudinal streak at the base of the cell, a transverse elongated spot at the middle, and another at the end of the cell; beyond the cell, three minute subapical spots and two other spots, one on either side of the second median nervule in a line parallel to the outer margin. Below the cell from the base toward the outer margin, the inner margin is broadly laved with blue, interrupted by a black line upon the submedian nerve. The secondaries have a large subtriangular blue spot extending from the base below the cell toward the outer margin, which it does not reach, and bounded inwardly by the anal fold, which is black. Underside: The underside is rich maroon; the spots are as in *orcas*, except that the fourth spot from the base of the primaries is divided in *propinquus* into two spots, beyond the interspace between which there is a large spot; and upon the secondaries the transverse median band, which is broad in *orcas*, is narrow and twice constricted in *propinquus*, and is followed toward the outer margin by a third conspicuous transverse band or spot, located between the third median and subcostal nervules. The fringe on both primaries and secondaries is white checked with black at the ends of the nervules. Expanse 32 mm.

Hab.—Upper Valley of the Ogové.

LYCÆNESTHES Moore.

7. **L. musagetes** sp. nov. ♂.—Allied to *L. ligures* Hew. Upperside: The wings are uniformly dark purplish blue. Underside: The underside is a pale blackish brown with no markings whatever near the base of the primaries and secondaries. The primaries have at the end of the cell a

double transverse bar of dark lines edged externally and internally with pale gray, followed by a submarginal series of similar markings extending from the costa to the inner margin and dislocated at the third median and first median nervules. This series of spots is succeeded by a very obscure marginal band of subhastate dark markings. The posterior wing has a double bar at the end of the cell, and a series of submarginal markings parallel to the border very much as in the anterior. The submarginal band is followed by a double series of pale gray lunulate markings, which are interrupted beyond the first median by a very large black ocellus, which is margined with red, and has the black pupil irrorated with metallic-blue scales. A similar ocellus smaller in size, is located at the anal angle. The underside of the abdomen is yellow; the remainder of the under surface of the body is concolorous.

♀.—The female has the upper surface blackish with pale gray markings disposed in bands upon the outer border of the secondaries; the underside is marked as in the male. Expanse 28–30 mm.

Hab.—Gaboon.

This species, which is very closely allied to *L. ligures* Hew., may be distinguished by the fact that it has not any markings at the base of the secondaries. In *ligures* there is a double bar on the costa near the base and a profusion of pale striæ on the outer half of the secondaries. The ground color in *L. musagetes* is blackish; in *L. ligures* it is a reddish brown. Mr. H. H. Druce, to whom I communicated one of my types, agrees with me as to its specific value. The two species are undoubtedly mixed in collections, but I find in a series of about thirty specimens of each species before me that the markings are constant.

8. **L. scintillula** Holl. ♀.—The female of this species, of which I have recently received a single example, differs from the male upon the upperside in having the bright orange-red color restricted to a large patch covering the limbal area about the middle of the wing upon both primaries and secondaries, the costa and inner margins of which are broadly black.

9. **L. erythropœcilus** sp. nov. ♂.—Allied to *L. lusones* Hew. Upperside: The base, the costa, the apex and outer margin, are broadly black. The limbal area is marked by a large suboval red spot indented at the end of the cell by a black tooth-like projection. The secondaries have the costa, the inner and outer margins likewise broadly black, enclosing a large subtriangular red mark upon the middle of the wing. The outer margin is interrupted by a series of red spots, of which the two between the median nervules are subhastate and pupiled with triangular spots of black. There is a marginal whitish line; the fringes are black. Underside: The underside is cream-colored, barred with red and black lines. The most conspicuous of these lines upon the primaries are a double curved transverse line beyond the cell extending from the costa to the

first median followed by a continuous double curved submarginal black line extending from the costa to the inner angle. The base of the costa is black. There is a large subtriangular transverse black spot next the base, a black bar surmounted by a very narrow curved black line at the end of the cell, and a conspicuous black transverse spot above the inner margin near its middle. The secondaries upon the underside have a black transverse curved line at the base followed by a spindle-shaped transverse black line extending from the costa to the inner margin; this is succeeded by another fusiform black mark running from the costa to the end of the cell, which is marked by a reddish spot. Upon the inner margin there are two black spots coalescing to form a subhastate mark upon the diverging ends of which is the red triangular mark. Beyond these is the median transverse series of spots, the one nearest the costa oval, the one beyond the cell club-shaped continued to the inner margin as a narrow curved line. This series of spots is divided outwardly by narrow parallel lines. The outer margin is broadly black interrupted on the margin by a series of cream-colored oval marks, which fuse with each other, and are pupiled with gray. There is a large ocellus on the first median and a small one at the anal angle. Both are crimson pupiled with black. Expanse 22 mm.

Hab.—Talaguga, Ogové Valley.

10. **L. xanthopœcilus** sp. nov. ♂.—Upperside: The upperside is dark brown, with a large yellow suboval spot on the primaries. Underside: The underside is white marked with black lines and spots. The primaries have a basal streak followed by a conspicuous subtriangular spot, which crosses the cell, and this is followed by three widely separated black spots, one in the middle of the costa, another at the end of the cell, and the third near the inner margin about the middle. The outer third is broadly black, and this black area is divided by four submarginal white lines, the innermost of which is narrow and broken, fusing at the first median nervule with the second, which is broad and irregularly curved and extends from the costa to the second median nervule. The third is narrow, parallel to the outer margin and the fourth is a mere line marking the inner edge of the fringe, which is black. The lines upon the primaries at the base are extended upon the secondaries, and in addition there are six or seven spots in the median area, of which those near the inner margin are smallest. There is an irregularly curved submedian line of brown geminate at the outer anal angles, and an ocellus pupiled with blue scales in the first median nervule.

♀.—The female is exactly like the male, except that it has a short curved median band upon the upper surface of the secondaries. Expanse 25 mm.

Hab.—Talaguga.

11. **L. melambrotus** sp. nov. ♂.—Upperside: The upperside is blackish with a blue reflection. The posterior wings have the fringes gray; a nar-

row black marginal line defined inwardly by an equally narrow white line, within which on the interspaces there is a series of black pupiled ocelli, of which those situated upon the median nervules are the largest. The irides of these ocelli are gray. Underside: The underside is white, ornamented with pale gray and black markings of a complex character. The margins of both primaries and secondaries are ornamented by a series of black pupiled ocelli, the irides of which upon the primaries are white, as also upon the secondaries, except in the case of the two upon the median nervules, which are the largest and have their irides red. This series of ocelli is defined inwardly upon each wing by a submarginal line of dark brown parallel to the outer margin. Expanse 20 mm.

Hab.—Kangwé.

This is a very small, but distinctly marked species.

I take the present occasion to present figures of several of the foregoing species as well as of several others which have recently been described by me, and which I have grouped upon plate.

EXPLANATION OF PLATE I.

Fig. 1. *Papilio policenoides* Holl., Ann. and Mag. Nat. Hist. Oct., 1892.
" 2. *Thaleropis trigona* Holl., Ann. and Mag. Nat. Hist. Oct., 1892.
" 3. *Tingra limbata* Holl., sp. nov.
" 4. *Tingra glagœssa* Holl., sp. nov.
" 5. *Larinopoda melandeta* Holl., sp. nov. Upperside.
" 6. *Larinopoda melandeta* Holl., sp. nov. Underside.
" 7. *Pseudaletis clymenus* Druce, co-type.
" 8. *Pseudaletis zebra* Holl., Psyche, March, 1891.
" 9. *Pseudaletis nigra* Holl., Ann. and Mag. Nat. Hist. Oct., 1892.
" 10. *Aphnæus crustaria* Holl., Psyche, November, 1890. Underside.
" 11. *Aphnæus ilogo* Holl., Psyche, November, 1890. "
" 12. *Aphnæus argenteola* Holl., Psyche, November, 1890. "
" 13. *Aphnæus orcas* Drury. "
" 14. *Aphnæus propinquus* Holl., sp. nov. "
" 15. *Aphnæus argyrocyclus* Holl., Psyche, November, 1890. "

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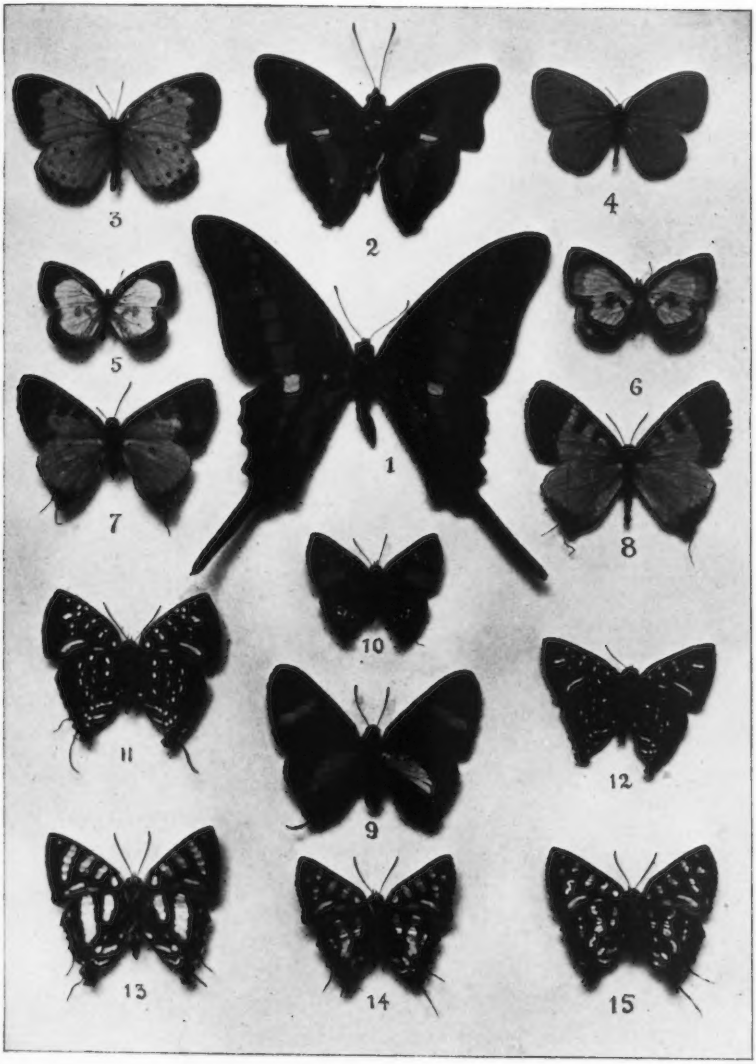
COLORADO CYNIPIDÆ.—Part II.

C. P. GILLETTE, Fort Collins, Colorado.

ACRASPIS.

A. undulata n. sp.

Galls resembling those of Mr. Bassett's *A. macrocarpæ* were found common on the leaves of *Quercus undulata* at Manitou, Col., on June 30th of this year. The inmates of the galls were mature at that time, and would run about when cut out. Up to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this date (November 19th) none of the flies have gnawed their way out of the galls, but a considerable number have been removed by the aid of a pocket-knife. As the galls have been kept in a warm room since the last of September, it seems probable that the flies do not emerge in the natural state before Spring, whereas *A. macrocarpæ* emerges in the fall. The flies differ from *macrocarpæ* by having the third joint of the antenna but very little longer than the first and second together, by having abortive wings not more than three-fourths as long as the thorax, by having the abdomen globular, not compressed, and by varying from 2.5—3 mm. in length. Specimens of *macrocarpæ* in my collection reared from galls upon *Quercus macrocarpa* in Iowa all have the sides of the front, the lateral margins of the mesonotum and the sides of the scutellum decidedly rufous. In *undulata* all of these parts are black, as is the entire insect, except a little rufous coloration on the tips of the coxæ and at the joints of the feet. Described from nineteen specimens cut from the galls, all alive and active, and apparently fully mature.

HOLCASPIS.

H. rubens n. sp.

Galls.—The galls are globular, from 10—14 mm. in diameter, composed of a dense corky substance, each with a single larval cell that is easily detached from the surrounding portions, attached singly to small twigs. They have either a smooth or rough exterior, and are of a light straw color, usually considerably tinted with red. They resemble very closely the galls of *Holcaspis rugosa* Bass. The flies, however, are very different.

Gall-flies.—General color rufous, with lines over the base of the wings; two parallel lines on anterior portion of mesonotum, line at base of scutellum, sutures of thorax and sternum, black. *Head* small; face hairy and coarsely punctured; sutures surrounding clypeus, tips of mandibles, usually the terminal joints of the labial and maxillary palpi, pits for the insertion of the antennæ, eyes and ocelli black; antennæ 14-jointed, rufous, shading into black towards the tip. *Thorax* and scutellum coarsely punctured and hairy; parapsidal grooves distinct, but extending only about half way from the scutellum to the prothorax. In some specimens the black lines of the mesonotum are dim or wanting, while in others they are heavy, the two parallel lines often coalescing; scutellum with shallow groove and no foveæ at base; metathorax black. *Abdomen* polished, with hairs upon the sides of the second segment, ovipositor sheaths black, a characteristic black dash across the venter, general color rufous,

but in a few specimens the color is quite dark. *Feet* rufous and hairy, with coxæ and tarsi more or less infuscate. *Wings* 5.5 mm long, areolet large, radial nervure thickened at tip and not attaining the costa and the cubital nervure not attaining the first transverse.

Described from upwards of fifty specimens, all females, reared from galls taken at Manitou, Col., Sept. 30, 1892. The flies began to emerge from the galls October 20th.

H. monticola n. sp.

Galls.—Dense cellular growths, rather cylindrical in form, but a little smaller at the base than at the free end and somewhat compressed laterally, the diameter in the direction of the twig being somewhat greater than the transverse diameter. The free end is usually rounded, but may be flat, slightly compressed or with a blunt elevated point. They are attached by a broad base in cup-like expansions of the small twigs. The largest galls will measure one-fourth of an inch in greatest diameter by the same in hight. They are black and dirty on the outer end on account of the accumulation of the dirt in the sweet substance which they secrete during growth. They are of a yellowish or greenish brown at the sides, the color being quite light at the base of the galls. A few of the two or three hundred galls that I have are reddish in color at the sides. Although the outer substance of the galls is very dense, the central cell is easily separated from it, and it seems large in proportion to the size of the gall.

The galls are exceedingly abundant on scrub oaks at Manitou, Col., and the galls are much visited by wasps and honey bees for the sweet which they secrete.

Gall-fly.—Black, tinged with rufous on head, thorax and legs. Length 3.5—4 mm. *Head* small, face rugose, somewhat striate between the eyes and mouth, sparsely haired, vertex finely rugose, ocelli inconspicuous and surrounded by a black area; antennæ black, 13-jointed, third joint a little longer than the first and second together, fourth joint about equal to the third, terminal joint as long as the two preceding, and all joints rather sparsely haired for *Holcaspis*. *Thorax* rather coarsely punctured, the punctures giving rise to hairs that form a sparse pubescence; parapsidal grooves distinct, but narrow, and only reaching about one-half of the distance from the scutellum to the prothorax. The two parallel lines from the collar and the lines over the base of the wings are very distinct; scutellum broadly rounded posteriorly and with a shallow groove at base. *Abdomen* black, polished, second segment with fine gray pubescence on either side near the base. *Wings* 5 mm. long, hyaline, nervures slender, areolet large. *Feet* blackish, tinged with rufous, often appearing quite rufous if held in the proper light, moderately pubescent.

Described from twenty-five flies, all females, reared from galls taken at Manitou, Col., Sept. 30, 1892. Flies began emerging from the galls November 10th.

H. brevipennata n. sp.

Galls globular, from 1—1.5 centimeters in diameter, attached singly to the underside and always near the margin of the leaves of *Quercus undulata*. The central cell is held in place by a rather abundant growth of frail radiating fibres, more or less branched towards their outer ends. The outer shell is very thin, and is of a straw color more or less stained with rusty-brown. The species seems to be badly parasitized, as twenty galls taken at Manitou, Col., September 30th, gave but two of the gall-flies, and these I cut from their cells.

Gall-flies.—Rufous, 3.5 mm. in length, wings not quite attaining the tip of the abdomen. The only black parts are the eyes, ocelli, two or three joints at the tip of the antenna and the almost black color of the terminal segments of the abdomen. In one specimen the head is quite dark, indicating that in some specimens it might be almost black. *Head* rugose, sparsely set with gray pubescence; antennæ 13-jointed, third joint slightly longer than the fourth, and fully as long as the four terminal ones together. *Thorax* rugose-punctate, not very densely haired, parapsides very distinct and extending the whole length of the mesothorax, middle groove absent; scutellum rather coarsely rugose and with two shallow foveæ at base. *Abdomen* globular, second segment covering fully two-thirds of the dorsum and sparsely pubescent at the sides, the hairs arising from small punctures, ovipositor sheaths very short. *Feet* uniformly rufous and quite hairy. *Wings* not quite reaching the tip of the abdomen, nervures black, the transverse and radial ones being specially heavy and smoky along their margin. In the apical cell are two dusky patches, one near the tip and one under the radial nerve near the base, areolet wanting.

Described from two females, both alive and active; cut from the galls October 31st.

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A NEW ICHNEUMONID.

G. C. Davis, Agricultural College, Michigan.

While out collecting one day last Summer I happened to spy a very odd looking parasite crawling over the leaves of a low bush in the oak woods near the college. It looked odd because it had only small stubs instead of well developed wings. At the first glance the wings appeared to have been injured, or perhaps

not properly expanded when the insect issued from the pupa case, but a closer examination showed both to be untrue. They prove to be naturally well formed, what there is of them, and are but dwarfed, abortive and useless.

Upon investigation I find the species is undescribed and belongs to the genus *Aptesis*. In our fauna there is only one other species known of these subwinged Ichneumonids, and that seems to be rare. While they probably are not as common as the entirely wingless species, they no doubt are made more rare by collectors discarding them with the injured and imperfect material as a part of it. The wingless forms are so distinctly different that they are seldom overlooked, but the partially winged ones are liable to deceive a person, and collectors should be on the watch for such forms.

I append the following description:

Aptesis major n. sp. ♀.—Dull black; head large, broader than the thorax, finely punctured; ocelli distinct, glassy; mandibles black, with external dull ferruginous spot; labial palpi black, maxillary palpi long, light brown; antennæ long filiform, the first three joints of the flagellum forming fully one-third of the length, scape and first two joints of flagellum rufous, remainder dark brown, except joints 4-8, which are white, except a narrow stripe beneath; pro- and mesothorax shining, slightly punctured; parapsidal grooves distinct; metathorax broad, quadrate, flat and generally sloping behind; smooth, except that it is densely and rather coarsely punctured; scutellum and blunt tubercles on metathorax dull rufous; most of femora and tibiæ on posterior legs dusky; remainder of legs rufous, except trochanters, which are much lighter; abdomen elliptical, finely punctured; petiole smooth and flat above, margined, greatly expanded near the tip; last half of third, the following segments and ovipositor black, remaining segments rufous; ovipositor exserted nearly the length of the abdomen; winglets reach nearly to the tip of the metathorax, nervures developed to the stigma; base of nervures and tegulæ fulvous. Length 4 mm.

One specimen, taken at Agricultural College, Michigan.

SYNONYMIC AND STRUCTURAL NOTES.

By HARRISON G. DYAR.

The genera of the Notodontidæ with a tuft on the internal margin of primaries (excluding Lanassa) may be distinguished as follows:

Primaries with an accessory cell.
  Antennæ of ♂ pectinated; eyes naked . . . . . **Notodonta.**
  Antennæ simple; eyes hairy . . . . . **Lophopteryx.**
Primaries without accessory cell.
  Antennæ of ♂ pectinated . . . . . **Pheosia.**
  Antennæ simple, ciliate . . . . . **Lophodonta.**

According to these characters the species fall in as below:

Notodonta Ochs.
  N. stragula Grt.
  N. pacifica Behr.
  N. elegans Strk.
    var. **grisea** Strk.
      notaria Hy. Edw.
  N. georgica H.-S.

Lophopteryx Steph.
  L. americana Harv.

Pheosia Hüb.
  P. dimidiata H.-S.
    rimosa Pack.
    californica Str.
  P. portlandia Hy. Edw.
    descherei Neum.
  P. simplaria Graef.
  P. basitriens Walk.

Lophodonta Pack.
  L. ferruginea Pack.
  L. angulosa S. & A.

According to superficial resemblance in size, shape and pattern of markings they would stand:

Notodonta.
  N. stragula.
  N. pacifica.
  N. georgica.
  N. basitriens.

Lophopteryx.
  L. americana.

Pheosia.
  P. dimidiata.
  P. portlandia.
  P. elegans.
    var. **grisea.**

Lophodonta.
  L. ferruginea.
  L. angulosa.
  L. simplaria.

It will be noticed that neither of these arrangements has been used in any of our lists, and it would appear as if neither structure nor superficial resemblance was considered essential for generic definition.

I have not been able to examine *Drynobia tortuosa* Tepper.

The species associated under *Heterocampa* are much alike in structure, but their larvæ differ so much that it may be thought advisable to break up the genus. This might be done as follows:

Heterocampa Doubleday.
  H. astarte Doubl. (type).
    menas Harr.
    varia Walk.

With this would go *obliqua*, *lunata*, *subrotata* and *celtiphaga*.

Lochmæus Doubleday.
Tadana Walk.
L. manteo Doubl. (type).
cinerascens Walk.
subalbicans Grt.
Cecrita Walk.
C. guttivitta Walk. (type).
albiplaga Walk.
indeterminata Walk.
mucorea H.-S.
C. biundata Walk.
olivatus Pack.
viridescens Walk.

and probably the names *pulverea* G. & R., *semiplaga* Walk., *umbrata* Walk. and *athereo* Harr., which I have not satisfactorily determined.

Misogada Walk.
M. cinerea Pack. (type).
unicolor Pack.
marina Pack.
sobria Walk.
Doubledayi Scudd.

The antennæ will sufficiently distinguish this genus only the terminal four joints being bare of pectinations.

Macrurocampa n. gen.—Head moderate, retracted; eyes large, naked; palpi scarcely exceeding the front. Thorax wider than long; abdomen exceeding secondaries; ♂ antennæ bipectinate for the basal 38 joints, the pectinations longest centrally; the terminal 15 joints bare; fore wings 12-veined; median vein 3-branched, veins 3 and 4 arising close together; cell closed by a concave cross-vein, from which arises vein 5 slightly above the middle; veins 6 to 10 on a stalk out of the apex of the discal cell; no accessory cell, or a very narrow one reaching from discal cell to the origin of vein 7 (which is half way to the apex of the wing) showing a tendency to be obsolete. Vein 11 arises from the subcostal about one-fifth its length from end of cell; costa straight, apex subacute, outer margin convex. Wings more than twice as long as broad; secondaries with two internal veins; median 3-branched, 3 and 4 arising together from lower corner of cell; cell closed by a concave cross-vein, from which 5 arises a little above the middle; 6 and 7 on a short stalk from the upper corner of cell; 8 runs close to the subcostal till just before the end of the cell; it is slightly sinuate, approaching the subcostal most nearly along the middle of the cell. The wing is ovate, evenly rounded; hind tibiæ with two pairs of spurs.

Type, *Noctua marthesia* Cramer.

M. marthesia Cram.
turbida Walk.
tessella Pack.
elongata G. & R.

The genus is distinguished by the very narrow obsolete accessory cell, often wanting, and by the structure of the larva, which bears a pair of long tails, even longer than those of *Cerura*.

The other species of *Heterocampa* included in Prof. Smith's list are unknown to me. They are *Chapmani* Grt., *superba* Hy. Edw., *thyatiroides* Walk., *mollis* Walk. and *nigrosignata* Walk. *H. nigroscripta* Walk. is said by Mr. Kirby to be *Thiacidas postica* from India, hence wrongly included in the list, and, finally, *H. nivea* Neum. is a *Cerura*, and has been redescribed by myself as *C. meridionalis* (Psyche, vi, 291).

Arctia minea Slosson.

I have examined the types in the collection of Mrs. Slosson. They are normally marked *A. michabo* Grt., but differ in the red, fiery tint of the pale marks which, in *michabo*, are usually of a pink tint. The name is probably worthy of varietal rank.

Ceruridia Slossonii Packard.

I am also indebted to Mrs. Slosson for the opportunity to examine this curious form. It is, with only slight doubt, a female of *Gluphisia avimacula* Hudson, of which the yellow shades are replaced by black. This variation is common in the genus; I have seen it in *G. severa* and the common *G. trilineata*, though these forms have not received names. The generic name *Ceruridia* is the same as *Melia* Neum. if my determination of the moth is correct. Both names appear to me unwarranted, as the moths do not differ in structure from *Gluphisia*, and the larvæ are identical in form and in pattern of markings. The species are somewhat larger than *Gluphisia* proper, but the pectinations of the ♂ antennæ are no longer in proportion. The species to which the names are applicable are:

G. Lintneri Grote.
G. severa Hy. Edw.
Danbyi Neum. (type of *Melia*).
G. avimacula Hudson.
Slossonii Packard (type of *Ceruridia*).

The Bombycidæ of Prof. Smith's list are a very heterogeneous assemblage. The genera *Pseudohazis* and *Hemileuca* undoubtedly belong to the Saturniidæ. This family has been too closely restricted by Prof. Smith. The females of some of the species which he has included show gradations to the simply bipectinate antennæ, as do some of the moths in having the two sets of pectinations of unequal length, and it is but a natural step to *Pseudohazis* and *Hemileuca*, which are otherwise the same in the structure and in the larva. They are totally dissimilar to the other species, which are all true Lasiocampidæ, with the possible exception of *Thauma ribis*, which I have not examined. *Quad-*

rina diazoma is correctly referred here, though Mr. Kirby, following Prof. Smith's published opinion, has placed it among the Zeuzeridæ.

There are no Bombycidæ in North America, unless *Bombyx mori* Linn. has really been domesticated, as is alleged.

Family **LACOSOMIDÆ**.

I propose this name for *Lacosoma* and the allied genera. These have been associated with the Psydridæ on the ground of larval habits, but they are different in the structure of the moths. A good family character is afforded by the position of vein 8 of the hind wings, which is not united to the subcostal by a cross-vein, but runs free and remote from it, much as in the Saturniidæ. These genera have been placed in the Drepanulidæ by Mr. Kirby, but on superficial resemblance only, which renders the reference doubly unfortunate.

The genus *Antarctia* Hüb. being restricted to South American forms in Kirby's Catalogue, the North American species must be variously distributed. *A. rufula* Boisd. will go to *Spilosoma*. and will stand as follows, as none of the names seem worthy of varietal rank:

Spilosoma rufula Boisduval.
punctata Pack.
proba Hy. Edw.
vagans Boisd.
pteridis Hy. Edw.

A. Beanii and *A. Brucei* are structurally near to *Spilosoma*, but differ in minor points and markedly in coloration. They will probably form a new genus when further studied.

A. rubra Neum. differs from all the other species in lacking the middle spurs of the hind tibiæ. It superficially resembles *Phragmatobia*, but differs in wing shape and in the pectinated antennæ.

Elpis n. gen.—Head retracted, tongue short, palpi obliquely descending, eyes naked, ♂ antennæ moderately bipectinate to the tips. Thorax as broad as long; abdomen short, conic, scarcely exceeding secondaries; posterior tibiæ with a pair of short apical spurs. Venation of *Phragmatobia* on both wings; costa of fore wings slightly convex, apex acute, outer margin straight, the anal angle rounded. Wing more than twice as long as broad; hind wings elongate-ovate, less triangular than in *Phragmatobia*.

Type, *Antarctia rubra* Neum.

E. rubra Neum.
var. **Walsinghami** Butl.

The species inhabits the western part of Oregon and Washington, doubtless extending its range into British Columbia.

ENTOMOLOGICAL NEWS for December was mailed December 2, 1892.

EXCHANGES.—Continued.

Coleoptera.—I wish to obtain Entomological literature in any language, especially that treating of Coleoptera and for works not in my possession will give good insects from the West and from Alaska, mostly Coleoptera. —H. F. Wickham, Iowa City, Iowa.

Lepidoptera.—I have for exchange *C. semidea, A. montanus, S. modesta* (imagos and pupæ), and other White Mountain material. The rarer Sphingidæ preferred.—R. Ottolengui, 115 Madison Ave., N. Y.

Lepidoptera (diurnal) of Iowa to exchange for species of same order not in my collection.—Henry G. Willard, Grinnell, Iowa.

Correspondence desired with amateur entomologists.—Wm. Wingrove Bathon, Aberdeen, Md.

Celeoptera.—Price-lists wanted.—Dr. E. B. Stephens, Plymouth, Mass.

Cynipidæ.—Named or unnamed Cynipidæ wanted by purchase or exchange. Always accompany the flies with their galls when possible.—C. P. Gillette, Ft. Collins, Col.

Orthoptera.—For exchange: Mexican Lepidoptera, unmounted, for literature, in any language, on N. A. Orthoptera. Also Indiana Orthoptera for others from any part of N. A.—W. S. Blatchley, Terre Haute, Ind.

Lepidoptera.—Will exchange Lepidoptera of California for those of other parts of the world.—Beverly Letcher, 532 California St., San Francisco.

Orthoptera of northeastern United States and provinces. Acrididæ and N. E. specimens particularly desired. Correspondence and exchanges.—Albert P. Morse, Wellesley College, Wellesley, Mass.

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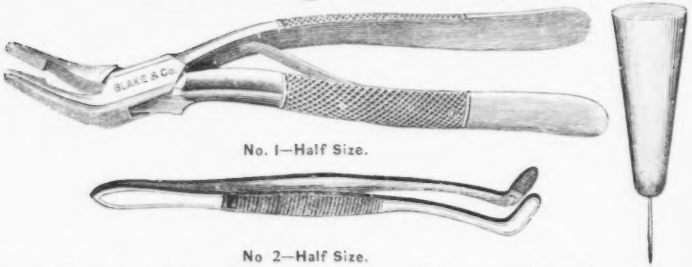

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